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ABSTRACT

The lack of economics literacy is a serious problem in the United States. Today, public school students are taught little if any economics and score very poorly on economics literacy tests, with the average test score being 40 percent. This absence of economic understanding hurts the economy in the following ways: (1) economically illiterate workers are not as productive, (2) decline in productivity causes an increase in the price of goods and services, (3) states have difficulty retaining employers and attracting new ones, and (4) economic illiterates do not make educated citizens since they cannot make informed choices. Economics education must be incorporated into all levels and types of education, especially vocational education, in order to produce a quality workforce. Individual citizens must be capable of making informed decisions in order to direct the country's economy and way of life. Employers now seek workers with more than simple job-specific skills. Workers need a basic understanding of economic processes, as well as the skills necessary to make sound, rational decisions on a variety of topics. There is a natural link between economics education and vocational education, particularly in teaching about work and career related issues and business competitiveness. Economics education must be made interesting to students in order to be successful, and a variety of methods can be used to incorporate it into the curriculum. Economics education must go beyond rote learning and develop thought processes and teach people with job skills to be flexible and to have communication and problem solving skills. (AS)

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# A Capital Course: Teaching Economics in Vocational Education

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**A VES Monograph**

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**A CAPITAL COURSE:**
**TEACHING ECONOMICS**
**IN VOCATIONAL EDUCATION**
A VES Monograph

In 1987, a test of "economic literacy" was given to more than 8,200 high school students nationwide:

* Only one in three could define "profit."

* Only one in four could answer questions correctly about inflation.

* Fewer than one in three recognized that lack of skills is linked to low pay or that investment is one way to help make the economy grow.[1]

Summing up the results, Dr. William Walsted told the American Economic Association: "There is one major finding that I wish to present in my remarks today: our schools are producing a nation of economic illiterates!"[2] John Redmond, executive director of the North Carolina Council on Economic Education at the University of North Carolina at Greensboro, is even more blunt: "At the national level, we are a nation of economic imbeciles... because by and large, our public school students are taught little or no economics. We have raised generations of economic illiterates."[3]

Every few months, it seems, a survey shows that American students do not know enough about one field of knowledge or another. Recently, studies have been released showing that students in the United States do not know as much about math, science, English, geography and economic education as do students in other countries. Economic education is as important as any of these. But while all American schools teach math, science, and English, and virtually all offer geography (either as a separate course, or as part of social studies), few provide courses in economic education. At best, the average high school student may take a course in consumer economics, but that is not sufficient to develop economic understanding beyond purchasing decisions.

Of all courses taught in school, economic education is the one that adults need again and again. We work, buy, pay taxes, invest -- yet too many of us do not have the economic education background to make informed decisions in these areas. Multiplied by millions of workers, economic illiteracy hurts the economy in at least four ways -- productivity, competitiveness, the quality of the workforce, and citizenship.

1. Economically illiterate workers are not as productive as economically literate workers. They do not understand their role in the success of the company, causing them to feel alienated and unimportant. They see no reason to concern themselves with the success or failure of the company. They become inefficient, wasting time and materials, while producing fewer goods and services. Disenchanted workers do the minimum work required to keep their jobs. They stay only to get a paycheck or because they lack the economic understanding to seek other work.

2. The firm compensates for the decline in production by increasing the number of employees, paying overtime or firing the inefficient workers and then incurring the cost of training their replacements. A decline or lack of growth in productivity causes the price of goods and services to increase because the unit cost of production is higher. That makes goods and services less competitive with those of other firms, states, and countries. Wages in Indiana are comparable to wages in other states (Indiana ranked 33rd out of 51 states in per capita income in 1986).[4] Wages in the United States are among the highest in the world. If goods and services produced here are to compete nationally and globally, Indiana workers must be skilled enough -- and productive enough -- to justify the cost of their labor.

3. A state with an economically illiterate workforce will have a difficult time retaining employers and attracting new ones. The cost of labor is a vital factor

in business and industry decisions about where to locate new plants. A state with a workforce that is not competitive in cost and productivity will lose quality occupations to other states and other countries.

4. Finally, economic illiterates do not make good citizens. They are not able to vote knowledgeably on complex bond and referendum issues or make informed choices about political candidates. Many economically illiterate people do not vote because they feel alienated. Others vote against bond issues and other types of investments due to a fear of change based on ignorance. Economic Education in the Schools, the landmark 1961 report from the National Task Force on Economic Education, stated:

> The effectiveness of government depends on the capacity and understanding of the people. For it is the people who, through their votes and other influences, determine within broad limits the scope and nature of government policies. If they are to exercise their great political power responsibly and effectively, more of our people must know more about our economy and must learn to think about economic issues objectively and rationally. The alternative is to make decisions on the basis of ignorance and prejudice. Nor is the case for economic understanding limited to preparation for effective voting. Leaders in every walk of life -- business, labor, agriculture -- need to understand the American economy, as do the people who work for the businesses and who are the members of the unions.[5]

**Economic Literacy**

How can vocational educators know when students have achieved economic literacy? One definition of economic

literacy is: "A capacity to apply reasoning processes when making decisions about using scarce resources." Economic reasoning implies having the capacity to:

> Define the choice-related problems that confront us. Identify and rank criteria or goals that shape our choices. Use knowledge (facts and concepts) to analyze the probable consequences of choosing each alternative. Take action based upon the evaluation of the costs and benefits of various choices.[6]

Students coming out of secondary and post-secondary schools simply do not have sufficient economic knowledge to function competitively in the workplace. On the multiple-choice Test of Economic Literacy, the random sample of high school students averaged only 40 percent correct answers. According to the results, students do not thoroughly understand any aspect of the American economy, let alone international issues or more abstract economic concepts.

The results showed that:

* Only 25 percent could correctly answer questions on inflation.

* Only 30 percent recognized that increasing investment could stimulate economic growth.

* Just 39 percent knew what the Gross National Product measures.

* Just 45 percent recognized that a government budget deficit is produced when government spending exceeds tax revenues.

* Less than 30 percent recognized that a major cause of low incomes in the United States was lack of labor market skills.

* Just 34 percent knew the definitions of profits.

* Just 47 percent knew the reason for a progressive income tax.

The students were right on only 34 percent of the national economy questions, 36 percent of the international economic questions, 44 percent of the

fundamental economic items, and 43 percent of the microeconomic issues.[7]

## Linking Vocational Education and Economic Education

To understand the link between vocational education and economic education, it is a good idea to have a working definition of vocational education. According to the Carl D. Perkins Vocational Education Act, vocational education can be defined as:

> Organized educational programs which are directly related to the preparation of individuals for paid or unpaid employment in such fields as agriculture, business occupations, home economics, health occupations, marketing and distributive occupations, technical and emerging operations, modern industrial and agricultural arts, and trades and industrial occupations, or for additional preparation for a career requiring other than a baccalaureate or advanced degree.[8]

In Indiana, the goal of vocational education is outlined in the state plan drafted by the Indiana Commission on Vocational and Technical Education (ICVTE): "The goal of vocational and technical education is to provide a quality workforce by preparing citizens for both employment and further education."[9]

To meet the goal of a quality workforce, economic education must be included in the vocational education curriculum. Without economic education, a student will not develop the work-readiness skills vital in today's economy.

In a 1981 article, Darcy discusses five sets of employment-based needs that students must fulfill to move from school to work. The second need Darcy discussed is "world-of-work economic education and information." According to Darcy:

> Young persons must have an understanding of the structure and function of work-related socioeconomic institutions, such as labor markets, business enterprises, labor unions and government. World-of-work education fosters a basic appreciation of the realities

> of production, marketing, consumption, investment, and distribution of income. It can help young men and women develop a personal sense of their productive role in economic life (creating goods and services) in contrast to the familiar role they play as consumers (absorbing or using up resources). World-of-work knowledge can also enhance individual productivity, mobility, and earning power.
>
> Beyond this general world-of-work understanding, young workers need up-to-date information about occupations, career pathways, and labor market conditions. They need descriptions of tasks performed by workers in particular occupations. They need to know what skills are required, ways of acquiring skills, and the rewards and drawbacks of employment in various occupations.[10]

Today, vocational education is being asked to incorporate additional subjects, ideas, and theories. No longer is it sufficient to teach a student one occupation. In a fast-paced world of changing technology, students must be prepared to change careers if their profession becomes technologically obsolete. To prepare students for a fast-changing future, vocational education programs must emphasize general, transferrable skills and knowledge, as well as job-specific skills. Economic education is one form of general knowledge that must be included in any vocational education program, because it is vital to the future of a vocational education graduate.

The goal of this paper is to illustrate the problem of economic illiteracy, its implications on society, and ways economic education can be incorporated into all types of education -- elementary through post-secondary -- but especially vocational education. It begins with a discussion of economic education and its development, proceeds to a detailed examination of the need to include economic fundamentals in vocational education, and follows with a discussion on when, where and how economic education in vocational education should take place. Throughout, examples of exemplary programs in Indiana and across the United States will be detailed.

**Economic Education: A Historical Narrative**

To attempt to define economic education in a few pages would be pretentious as well as impossible. The intent here is to provide the reader an understanding of the context in which economic education -- its terminology and theories -- are used in this paper.

The field of economic education developed as a way to document and describe the dynamic changes that occurred, when society grew away from non-market societies (feudal, tribal) toward market societies. The settlement of the new world was a major impetus for the changes that occurred in the 16th through 18th centuries. To understand why these dynamic changes occurred, a brief description of the feudal system and the causes of its evolution into a capitalistic system follows.

The feudal society was dominant throughout Europe (especially Western Europe) in the Middle Ages for several reasons. First, the fall of the Roman Empire, the major cities began to lose population, in part because delivery systems for goods collapsed. The population of Rome fell from 1,500,000 to 300,000 during the fifth century.[11] As a result, not only did delivery systems disappear, there was no longer any dominant political organization. Small fiefs formed throughout Europe, each with its own language, money, laws and government. There was little or no trade between fiefs, each becoming self-sufficient, compressed into a size that was defendable yet large enough to support the population.

The standard fief was several thousand acres controlled by the lord of the manor. Secular or spiritual, the lord controlled all aspects of the fief -- land, buildings, crops, livestock and people. The serfs worked for the lord, laboring in the fields or in the lord's shops up to five days per week. After the lord's work was finished, the serf could work in his own fields.

In exchange for this service, the lord provided physical and economic security. Physical security was in the form of the lord's army, which fought against the armies of rival lords. The economic security was in the form of food in time of famine, use of the lord's oxen and horses to work the serfs' fields, and provision of household goods that the serfs could not afford themselves.[12]

Toward the end of the Middle Ages, the fiefs began to band together, forming nations and centralized governments. The causes are many but include emergence of itinerant merchants, growth of towns and cities, and the Crusades. Itinerant merchants, usually heavily armed, traveled from fief to fief selling their wares. Cities and towns began to re-emerge, in large part because the merchants re-opened delivery systems between fiefs, systems that had been closed for hundreds of years. Finally, the Crusades showed the Europeans a more sophisticated society, the urban society found in Venice and Byzantium. Many of the Crusaders realized that the more open societies offered far greater opportunities for riches than feudalism did.

As the fiefs began to merge into states, monarchs emerged with power supported by the banding of these fiefs. The monarchs began funding explorers to find ways to bring far-away riches to the monarchs as quickly and cheaply as possible. The monarchs realized that the richer they were, the more powerful they would become. Eventually these explorers discovered the riches of the New World. With the influx of riches into Europe, prices began to rise, up to 400 percent in just over 100 years.[13] As a result, the lords of the fiefs, who had only the goods their land could produce, had difficulty coping with the increases in the cost of needed goods and services that the fief could not produce.

Slowly, power began to turn away from the lords, who had neither skills nor power that could be transferred to new-world needs. The lords were not prepared to enter a capitalistic marketplace. The merchants and artisans, who craftsmanship and entrepreneurial skills, not only were able to adapt to their new roles, they thrived in them.

The more opportunities the artisans and merchants had, the more their power and money grew, at the expense of the lords. The lords were forced to sell land and possessions, which were quickly purchased by the merchants and artisans. Since these people could not have serfs, they employed people to tend their fields and perform other duties that the artisans and merchants no longer had time to do themselves.

The rise in power of the artisans and merchants led to major social and economic changes. Labor, land, and property became commodities, goods and services that could be traded. Labor agreements had to be made.

The relationship between serf and lord no longer was based on work in exchange for subsistence. Land developed into property, a commodity that could be bought, sold, or used for any purpose the deed holder deemed fit. Property developed into capital, "manifesting itself no longer in specific goods, but as an abstract sum of infinite flexibility whose value was its capacity to earn interest or profits."[14]

Over time, with advances in technology, transportation, society, and political systems, the market system we know today developed. With the development of the market system, the need to understand the dynamics of market systems grew, eventually leading to the current field of economic education.

This is not to say that economic ideas were not considered before the discovery of the new world. Aristotle, circa 350 B.C., wrote:

> The useful parts of wealth getting are, first, the knowledge of livestock -- which are most profitable, and when, and how -- as, for example, what sort of horses or oxen or any other animals are most likely to give a return. A man ought to know which of these pay better than others, and which pay best in particular places, for some do better in one place and some in another.[15]

In fact, economic thought has existed throughout history. The development of economic education as an academic field occurred when free markets became dominant in a great many nations, primarily in Europe and North America. Venice and Byzantium practiced capitalism at the time of the Crusades, several hundred years before capitalism became prevalent throughout Europe.

Economic education as a field of study has had a relatively short lifetime. The study of economic education developed in the 18th century, with the publication in 1776 of Adam Smith's <u>An Inquiry into the Nature and Causes of the Wealth of Nations</u>. Smith's was the first scholarly attempt to define and explain the components of a market system, detailing such issues as competition, division of labor, profits, capital, taxation, and government regulation.

Smith argued against government control or other interference, contending that the market system would regulate itself through an "invisible hand."[16] The

invisible hand meant competition, supply and demand, which force the producer of goods and services to make what will sell, rather than simply what they may want to produce. The ability to adapt to the guidance of the invisible hand determined the success or failure of a firm as well as the economic destiny of a nation.[17]

Two other great economists, the Rev. Thomas Robert Malthus and David Ricardo, soon followed Smith. Malthus, in his booklet An Essay on the Principle of Population as It Affects the Future Improvement of Society, writes of his concern about an imbalance between food production and population. He felt that due to a great increase in population, there would be starvation in the world. Some contend that the classic proof of Malthus' theories is in many Third World nations today, where thousands are starving, in part because their populations are growing too quickly for domestic food production to keep pace.

Ricardo studied the effects of limited natural resources on an economy. He felt that once these limits were reached, societal progress would stop and people would be frozen at their level of socioeconomic status. This would cause class friction. To avoid this, Ricardo believed, restraints on population and production were needed. Ricardo is also credited with defining comparative advantage, the idea that one nation should specialize because it can produce a product more efficiently than others. Under the theory, that nation would use the product to trade for goods and services that it needed but could not produce efficiently.[18]

After these three economists came two more, who saw that economic institutions were not based solely on natural law but were man-made and could be changed for the betterment of a nation. The first, John Stuart Mill, felt that the laws of distribution were not natural but man-made. He developed ideas on progressive taxes and distribution of wealth that could benefit the poor as well as the rich.[19]

The other economist was Karl Marx. Marx analyzed the capitalistic society that Smith described and promoted, finding the flaws and faults of a self-regulating market system. Marx saw capitalism as an unstable system that eventually would collapse. In this regard, Marx is the antithesis of Smith. Smith saw capitalism as a stable system of growth; Marx saw it as unstable, in large part because of the unstable nature

There were two primary flaws in capitalism, according to Marx. One involved profit. Every attempt to make additional income has a large set of potential crises attached to it. If a firm decides to expand production, it must be able to obtain the materials, capital (land, buildings, machinery and money) and labor at a cost low enough to generate a profit. A failure on any of these points not only could damage expansion plans but destroy the firm, if the firm could not compete without the expansion. Even if all that goes well, faulty marketing research, an incorrect estimate of demand, or a recession could still mean ruin if the firm's resources have been stretched too thin.

The second involved what Marx viewed as the inevitable assimilation of artisans and small businesses by larger ones. This would produce two classes of society -- business leaders and labor. The workers, feeling additional socioeconomic pressure, would become more disenchanted. Eventually rioting would start and the business leaders would lose control.[20] Marx describes the process in Capital:

> Along with the constant decrease in the number of capitalist magnates, who usurp and monopolize all the advantages of this process of transformation, the mass of misery, oppression, slavery, degradation and exploitation grows, a class constantly increasing in numbers, and trained, united and organized by the very mechanism of the capitalist process of production. The monopoly of capital becomes a fetter upon the mode of production which has flourished alongside and under it. The centralization of the means of production and the socialization of labour reach a point at which they become incompatible with their capitalist integument. This integument is burst asunder. The knell of capitalist private property sounds. The expropriators are expropriated.[21]

Other economic theories have been developed since Marx. However, these are primarily adjustments to the thinking of Smith or Marx, offering corrections or showing new ways to adapt, apply, or interpret the masters. Among the most famous of these is the work of John Maynard Keynes.

Keynes felt that the capitalist system of Smith needed to be changed to prevent some of the problems that Marx wrote about. Keynes was able to see first hand the weaknesses of uncontrolled capitalism, because he lived through the great depression. Yet, he still believed in the general principles of capitalism and disagreed with Marx's belief that capitalism was doomed by too much growth and class antagonism.

During the Great Depression, Keynes wrote a very technical book about the economy titled The General Theory of Employment, Interest and Money. In his primary disagreement with Smith, Keynes felt there was no self-correcting mechanism in a capitalistic system. He believed government must take the lead to spur the economy during a stagnant period. According to Keynes, the reason stagnation in an economy could occur was deficient aggregate demand. A laissez-faire policy would only extend stagnation.[22] To overcome it, government must spend, even if it means paying out more than the government receives in taxes.[23]

Another adaptation of capitalism is supply-side economics. J.B. Say, a French economist and contemporary of Malthus and Ricardo, developed Say's Law of Markets. A rarity in economics -- a brief, clear theory -- Say's Law of Markets is that "supply creates its own demand." This theory was popular until Keynes and has been reborn under the term supply-side economics in the 1970s and 1980s.[24]

Supply-side economics (also called Reaganomics in the 1980s) is based on the proposition that reducing costs (especially taxes and other fees paid to the government), will increase the incentive to produce. Increased production will increase employment and income. Supply-siders are not concerned with demand. The theory supported by supply-siders is: "Produce the goods, and the purchasing power to buy them will be created in the act of production itself."[25]

Banaszak and Brennan sum up the various economic theories and systems into three economic system types: traditional, command, and market.

Traditional describes economic decision making through the social structure. Traditions and customs frame the economic decisions of the society, resulting in little change in the economic structure from generation to generation. Primitive tribes, with tradition guiding such matters as crop timetables and hunting seasons, are an example.

Command systems are those in which the government and its agencies make all major economic decisions. All aspects of production and distribution are government controlled, including resources, labor and facilities. The People's Republic of China and the Soviet Union operate command systems.

The third system, the market system, allows individuals to make economic decisions based on their economic resources, both as consumers and as producer of goods and services. Freedom of choice by the individual is the essential element of the market system. The economies of Japan, the United States, and Great Britain are based on the market system.[26]

The science of economics examines:

The needs of the society and its members.

The production capabilities of the society and its members (what and how much can be produced).

How goods and services will be distributed to the members of the society.

How the society can acquire goods and services it cannot produce efficiently on its own.

The system employed by the society to accomplish the above.

No matter what the economic theory, the vital issues of economics are:

How to match the supply of goods and services to the demand.

How to develop the most efficient way to produce and deliver the goods and services.

How to develop systems that can best handle scarcity of goods and services or means of production.

All economic systems must be able to answer these three questions:

1. What goods or services should be produced?

2. How should they be produced?

3. Who will receive the goods and services produced?[27]

**Economic Education**

In the book Economic Education, Frankel states:

> In the free society and economic system of this nation, the decisions of individual citizens, acting independently and collectively, determine the direction of the economy. If those decisions are informed and wise, the nation will prosper. If they are based on emotion, prejudice and ignorance, the nation will stagnate and collapse. The function of economic education is to assist our citizens to make those economic decisions that foster best the attainment of the American goals of economic growth, stability, security, freedom and justice."[28]

No longer are job-specific skills a sufficient vocational education goal. Employers are now seeking people with more skill than ever before. With tight labor markets and increased competition, especially in manufacturing, employers are seeking people with broad-based basic skills. These basic skills include:

> Learning to learn -- the knowledge and skills to learn effectively, no matter what the situation;
>
> Problem-solving -- the ability to think on one's feet;
>
> Creative thinking -- the ability to come up with innovative solutions;
>
> Self-esteem -- pride in self and belief in one's potential to be successful;
>
> Goal-setting/motivation -- the know-how to get things done;

> Personal and career development skills -- awareness of the skills needed to perform well in the workplace;
>
> Interpersonal skills -- the ability to get along with customers, suppliers, and co-workers;
>
> Teamwork -- the ability to work with others to achieve a goal;
>
> Negotiation -- the ability to build consensus through give and take;
>
> Organizational effectiveness -- the understanding of where the organization is headed, and how one can make a contribution;
>
> Leadership -- the ability to assume responsibility and motivate co-workers when necessary.[29]

Economic education in the curriculum will help develop these skills. Decision-making skills are developed because one function in economic education is to decide what to produce, how to produce, and how to distribute. Also, consumer decisions must be made. As a result, economic education helps develop the skills necessary to make sound, rational decisions on a wide variety of topics. Economic literacy has similar impacts on the other skills listed.

Economic education does more than just teach economic theories. It helps develop the mind to understand and analyze a wide variety of data and make a decision based on the information. As John Maynard Keynes said in describing economic education:

> The theory of economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw correct conclusions.[30]

**Economic Education vs. Consumer Education**

Economic education is more than just consumer economics or consumer education. Consumer education focuses on the individual's role in the economy. The list of consumer education goals below illustrates this clearly.

1. To promote an understanding of the roles a person must perform as a worker, consumer and citizen.

2. To provide an understanding of money-management skills required in borrowing, saving, investing and spending.

3. To provide an understanding of the relationship that exists between major components of the economy such as consumers, producers, government and trade.

4. To provide an understanding of how economic analysis can help solve problems such as the energy crisis, inflation, poverty, crime, racism, and illuminate issues such as taxation, labor and business.[31]

Consumer education, while important, does not attempt to show thoroughly the dynamics of the economy. Instead, it attempts to help a student enter the economy by showing how to handle money and explaining why people work. It does not develop the strong decision-making processes that economic education does. Nor does it delve into the economic concepts that need to be applied to all aspects of life.

As a result, consumer education is not a substitute for economic education. It is, however, important in its own right. To use consumer education as a substitute for economic education is similar to using health education as a substitute for biology and chemistry. At a broad level they have some overlap, but the courses are clearly designed with different goals.

Another subject often used as a substitute for economic education is civics. According to Terrel H. Bell, former U.S. Secretary of Education: "Most modern civics classes do an adequate job teaching about the structure of government, but the importance of our economic system and our social institutions receive too little attention in the classroom."[32]

To define economic education as it applies to vocational education, the Department of Adult, Vocational and Technical Education of The Illinois State Board of Education conducted a three-year project to infuse economic literacy concepts into vocational

education. The board decided that economic literacy involves the knowledge, skills or behaviors that would allow an individual to function or perform effectively as a citizen, producer and consumer in the free-enterprise system.

Embodied in this concept are the knowledge, skills or behaviors that result from formal and informal studies of the following components of economic education:

- Worker productivity
- Free-enterprise system
- Components of the economy
- Consumer as a decision maker
- Small business functions
- Economic principles in the marketplace
- Economic stability and growth
- Economic concerns of the future
- The world economy
- Circular flow of the economy
- Economic measurements

In addition to these components, the board considered the following competencies necessary for a person to be economically literate in today's society.

> The ability and willingness to assume the responsibility of a good citizen.
>
> The ability to engage in positive inter-personal relationships.
>
> The ability to understand personal economics and their relationship to skills required for employment and advancement.
>
> The ability to understand our basic economic system (e.g., profits, revenues and supply and demand).

For individual citizens, a basic understanding of the economic process is an ongoing essential ingredient to their roles as productive workers.[33]

If the Illinois definition is met, then a student is not only economically literate but also more ready to work than an economically illiterate student. With the knowledge and understanding of the components of economic literacy, students will understand their places in the work environment and society in general.

Economically literate individuals can understand such issues as labor markets, occupational growth or decline and comparative wage rates, and they can make career, family and citizen decisions about these issues. A workforce of economically literate people can adapt to any economic situation by maintaining general, transferrable skills that can be used in other occupations, companies, and even geographic areas if the situation calls for change.

Further, the economically literate individual is one who has strong decision-making skills. Economic education teaches the consequences of choice.

Economically literate workers understand:

> The need for efficiency, in terms of time and materials. The firm must have high productivity from all employees to be effective.
>
> Their role in the firm, as a producer of goods and services.
>
> The importance of being able to spot problems and help develop methods to correct the problems.

If "the goal of economic education is to foster in students the thinking skills and substantive knowledge necessary to become effective and participating citizens,"[34] how can the results be measured? When is a person economically educated? When do persons have sufficient economic knowledge? In their landmark work, A Framework for Teaching Economics: Basic Concepts, the authors Bach, Calderwood, and Saunders described six keys to economic understanding for students.

1. Practicing a reasoned approach. Students must recognize that economic issues can be analyzed effectively only by replacing emotional judgments with an objective, rational, and systematic approach -- a reasoned approach.

2. Mastering the basic concepts. Students must have at their command a set of basic concepts to give them the capacity to think about economic issues in a reasoned way.

3. Possessing an overview of the economy. Students need a simple overview of how

the economic system works to serve as a structure for examining specific issues.

4. Identifying the issues. Students must possess the knowledge and skills to recognize the types of economic issues they are likely to encounter as consumers, workers, citizens, and employers.

5. Applying these elements to particular issues. Students must be given practice in using the reasoned approach, working with the basic concepts, and identifying the issues -- first on simple and then on more complex real-world issues. The ultimate test is their ability to apply these elements to a range of newly emerging issues.

6. Reaching decisions on economic issues. Students must learn how to take the final step of forming their own judgments on economic issues. This requires making decisions based on their analysis of the issues, tempered by their own values. This last step includes knowing when it may be impossible to reach a judgment.[35]

The link between vocational education and economic education is more natural than the connection between economic education and either academic or general education. A primary goal for vocational education is to train students to be productive workers. As a result, vocational education not only must instruct students in the skills needed for a specific occupation, it must also instruct the student on issues that pertain to work readiness. Vocational education does more than teach a student how to operate a machine; it prepares a student for a career.

The need for economic education is clear. It is vital today, with ever increasing demands placed on individuals, businesses, cities, states and nations, demands not only to remain competitive but to improve, grow and prosper. Without economic literacy, a person is at a distinct disadvantage. An economically illiterate workforce is at a competitive disadvantage.

**Minimum Age for Economic Understanding**

When is the best time to introduce economic education? As soon as possible. Studies have shown that even very

young students can begin to understand economic concepts. An example of young students learning and understanding economic concepts comes from Texas.

The Hunt Elementary School, in Hunt, Texas, has a school corporation that is part of a unique program that has been effective, not only in teaching economic principles but in providing strong participation in the free-enterprise system. The Hunt Fifth and Sixth Grade Class, incorporated in 1983, is now in its 14th year of operation. Each school year, the class elects new officers, and the officers are sworn in by a Justice of the Texas Supreme Court. From there, the students set out on one of a series of fund-raising projects. And raising funds is something that they do very well, clearing more than $30,000 in 1986. Their most famous product is the "Texas Hill Country Weather Stone," which was featured in the Nieman-Marcus catalog. For $5, the buyer received an authentic Weather Stone and the following instructions:

> Place stone outside of any shelter in exposed area. Allow stone 30 minutes to become acclimated. By observing the stone, the following conclusions about the weather can be assumed: If the stone is wet -- rain; if the stone is dry -- not raining; if the stone coughs -- air pollution; if the stone jumps up and down -- earthquake.

The stones proved very popular. Ronald Reagan, Walter Cronkite and Tom Landry are proud owners. The goal of the class is not simply to make money. Students receive lessons in math, civics, geography and other subjects based on the business. For instance, geography is taught in part by finding and studying the locations from which students receive mail. Students have been able to use some of the money from the business to finance field trips. They have visited Mexico, Canada, Los Angeles, New York, St. Louis, Washington, D.C., and Williamsburg, Va. The students have also been asked to give presentations at several colleges and universities in Texas, including The University of Texas.[36]

If fifth- and sixth-grade students can understand the economic concepts involved in managing a $30,000 net-income business, it follows that many concepts can be learned at an early age. In fact, studies in 1963 and 1977 demonstrated that children in kindergarten can learn economic decision making, if the instruction is at their intellectual level.[37] A 1978 study showed

that by age 11, the average student understood the concepts of profit and private ownership, the two most important concepts in the capitalistic system.[38] Since students at a pre-secondary level can understand economic concepts, it is apparent that students in vocational education programs at the secondary and post-secondary levels must be mature enough to understand economic thought.

Assuming that most vocational education students have little understanding of economic education (based on the Test of Economic Literacy discussed at the beginning of this paper), economic education must begin at an introductory level. A report published by Illinois State University discussed the general structure of an economic education course for secondary school students.

> The economics course recommended for 11th or 12th grade should provide meaningful introduction to contemporary economic problems. Emphasis should be given to using the current economic news and events that have an impact on students, their families, and their future to stimulate interest and motivation. The introductory course should:
>
> 1. Help the students conceptualize the economic institutions of our economy: competition, private property, consumer sovereignty, profit motivation, and the market mechanism.
>
> 2. Acquaint the student with economic performance measures and tools of analysis: Gross National Product, Consumer Price Index, real income, productivity, price determination, opportunity costs.
>
> 3. Provide the student with concepts, understandings, and facts necessary to make individual and group decisions of economic consequence: distribution of income, taxation, fiscal policy, monetary policy, poverty, government regulation, and international inter-dependence.

4. Provide the student a framework of a dynamic economic system: market mechanism, circular flow analysis, role of government, and comparative economic systems.

> The teacher must strive to retain and build upon the student's curiosity and concern about complex contemporary problems. The student should also be shown the use of the analytical tools of the economic discipline, but the teacher must be careful not to insist upon rigorous development of analytical tools in the introductory course.[39]

While studies have shown that students can learn economic concepts at an early age, few elementary, middle or pre-vocational secondary schools have any economic instruction in their curricula. Even though studies show economic instruction can take place in elementary school, few students have any exposure to economic education until secondary school, at the earliest. According to the Indiana Commission on Vocational and Technical Education, during the 1987-88 school year, 95,963 Indiana students were enrolled in vocational education programs at the secondary school level.[40] The majority of these students have had little or no exposure to economic education, yet they are being specially trained to enter the workforce in a specific occupation or field.

**Ways to Incorporate Economic Education Into Vocational Education**

A key to successful economic education programs is interest. The teacher must be interested in the subject and must motivate students to be interested. Economic education does not have to be stuffy, theoretical classwork. It can be exciting and accessible to all students, if the teacher makes use of available resources. The report by Illinois State University suggests several ways to make economic education more interesting.

1. **Problem-solving and student-teacher planning.**
   Committees can be organized to gather information from various sources. The exchange and evaluation of the information should be planned cooperatively

between the teacher and the students by means of classroom activities such as debates, panel presentations, and investigations. The key to the entire process is student involvement and teacher guidance.

2. **Expository teaching (modified lecture).** The lecture method is probably the most criticized and yet most commonly used approach to instruction in economics. The structure or organization of the concepts can make a difference in achievement of the students. Expository teaching can be improved with the use of behavioral objectives, transparencies, and appropriate structure of content.

3. **Classroom resource center.** The classroom can become a learning laboratory, with a section of the room furnished, equipped, and supplied as a learning resource center. A table becomes a work area, a display, and a demonstration focus, or a place for discussions, conferences, and panel presentations. Racks and shelves should be available for periodicals, books, pamphlets, maps, charts, graphs, and other illustrative materials.

   An economics learning lab should contain annual reports, government brochures and pamphlets, national publications, teaching units, daily news events, and student-prepared visual aids. One purpose of the laboratory approach is to familiarize students with the range of reading in economics available to them and to encourage development of a lifelong interest in keeping current on economic developments.

4. **Field experiences.** Many economic concepts can be illustrated best by taking students out of the classroom and into the community to observe firsthand people who deal with these concepts. Preparing the student for the field experience and follow-up activities provides lasting educational benefits from field experiences.

5. **Guest speakers.**
The community can be moved into the classroom with a guest expert. Again, student preparation and follow-up activities enhance the educational benefits available from guest experts.

6. **A community corporation as a partner in the classroom.**
To strengthen the learning about economics and to bridge the gap between the textbook and the real world of business, enlist the financial and active participation of a local corporation to provide a laboratory for a high school economics class. The community corporation can provide materials, guest experts, field experiences, and actual examples and illustrations of real world economics.

7. **Student-conducted interviews.**
When it is not possible to have a particular guest speaker, or when a group field trip cannot be arranged, it is possible to gain access to the source through a student-conducted interview. The teacher should make the initial contact to obtain permission for a student to interview or visit. The critical element in this procedure is the proper preparation of the student interviewer. A committee of class members or the entire class can help the student to prepare a list of questions designed to obtain the information needed. The student should be encouraged to tape record the interview. After the interview, the student can present an oral report to the class.[41]

Certainly not all of these methods are appropriate for every classroom, especially in vocational education. However, there are some methods that could apply to every classroom, at least on a modified basis. For example, having a community business as a partner in economic education is a concept that can be beneficial to students and employers.

An example is the Junior Achievement Applied Economics program. The program consists of one semester of

economic education, using an economic education teacher and Junior Achievement books and materials. On a weekly basis, a partner from the business community explains to the class how the economic ideas and principles that they are learning are applicable to the partner's business. The course covers economic terminology, the U.S. economic system, international economics, and other economic theories, and it provides for a student company. One goal of the course is to tie economic education to the lives of the students, through the student company, the business partner, and the course materials.

Textbooks and other materials for the course are supplied by Junior Achievement, with the business partner's firm paying most of the cost of the materials. The program provides training by Junior Achievement for the teacher and the partner. In the 1987-88 school year, more than 205,000 students participated nationally, including more than 2,100 in central Indiana.

Through the combination of the business partner and the student company, the course offers the students a wider variety of experiences and examples than the traditional lecture method of economic education.

Specific disciplines within vocational education lend themselves to economic education more naturally than others. Agricultural education is a prime example. With the family farm becoming a multimillion dollar business, every decision carries enormous economic impact. Without economic education, it is more difficult to make decisions on purchases of land, equipment, livestock, and other items because the farmer does not have the knowledge to make an informed decision.

An example of applying an economic principle to a common agricultural decision is determining the amount of fertilizer to use on corn. An economically literate person will apply the principle of diminishing returns. Diminishing returns recognizes that the marginal cost of the fertilizer is the same as the value of the additional corn produced as a result of using the fertilizer. Therefore, the cost of fertilizer purchased should not exceed the expected value of the excess corn produced. Similar applications can be used to help understand trade-offs between labor and equipment and different crops that could be planted.[42]

The number of farm foreclosures during the last 15 years helps illustrate the need for economic

understanding in farming. Economic education would also apply to those in agricultural education who want to enter landscaping, animal husbandry, or other non-farming agricultural occupations.

**Delivery Options for Economic Education in Vocational Education**

Incorporating economic education into vocational education takes one of three general forms:

> Academic - A separate academic class taught by an economic education or social studies teacher.
>
> Vocational - Economic ideas integrated with vocational education instruction in the vocational education classroom.
>
> Combination - A combination of the two, reinforcing classroom instruction in economic education with application ideas in the vocational education setting.

Each option has advantages and disadvantages, as illustrated in the following table.

| Option | Advantages | Disadvantages |
|---|---|---|
| Academic | Teacher trained in economic education. | Teacher not trained in vocational education. |
| | Structured format, can systematically cover wide range of issues without having to tie issues to specific types of occupations. | Unable to tie economic issues to vocational instructional training. |
| | One teacher, so no worries about conflicting theories or viewpoints being taught. | Communication problems between academic and vocational teachers, causing students to not appreciate the correlation between the two fields. |
| Vocational | Teacher trained in vocational education. | Teacher not sufficiently trained in economic education. |
| | Easier to relate economic education to specific vocation being taught. | Teacher may neglect or ignore economic instruction when he/she loses interest in economic education. |
| | Each instructor giving economic insights that relate to a specific skill. | Too many people teaching economic education, causing confusion for the students. |
| Combination | Economic education and vocational teachers combining to instruct students in economic education, demonstrating the importance of economic knowledge. | Lack of communication causing teachers to emphasize different issues, confusing the students.[43] |

The keys to success in using any of these options are communication and leadership. Communication is needed among and between teachers and administrators to ensure that all involved are aware of the goals and purpose of economic education. Leadership is needed to create the goals and to keep all involved committed to achieving the goals set.

**Specific Strategies for Economic Education in Vocational Education**

Clearly, there is a need to incorporate economic education into vocational education. Further, there are several delivery options that can be used to incorporate economic education. Below are specific examples of ways that economic education is being incorporated into vocational education programs.

Home economics is a discipline where economic education can easily be incorporated. For years, consumer economics has been taught in the home economics curriculum. Expanding the scope from consumer economics alone to consumer economics plus a separate economic education course is an option. Samples of specific tie-in projects that show the relationship of home economics to economic education include:

1. Starting a class business (similar to the Applied Economics business) such as a day-care center, bakery, apparel making or design, or other home economics activity. This would allow the students to get a hands-on understanding of many economic concepts.

2. Working with local hospitals or food kitchens to underscore the need for economic understanding in a governmental or large private sector setting. The students could be involved in any of several projects, including, but not limited to internships, community speakers, and student interviews.

These examples are not meant as replacements for economic education. They are listed to show how easily economic education can be incorporated into home economics.

Economic education also could be merged smoothly into industrial education. Again, tie-in projects could help establish the link between industrial education and economic education and facilitate economic understanding among the students. Under one method, the industrial education class would develop a product or service that could be purchased by a manufacturer or user in the community. The class would not bid against commercial companies for projects; it would offer to produce a needed but peripheral product or service. The firm could obtain the product or service by supplying raw materials or machinery or by subsidizing some or all of the cost of production.

The program has distinct benefits for students, schools, and community firms or users. The program teaches students to produce efficiently (if there is not some economic benefit, no firm will be party to such a program). They also learn first-hand about supply and demand and scarcity.

The school benefits by giving students the opportunity to work on meaningful projects. The school gets financial assistance when the firm supplies or subsidizes purchase of materials and equipment. The firm benefits because it is able to job out inefficient or peripheral production tasks, often to a facility that is nearby. If the firm helps subsidize the project's cost, the firm will not have to spend large sums of money for expensive machinery and equipment for necessary yet minute tasks. If the firm decides to expand this part of its production, a trained pool of potential employees would be readily available.

Specific skills that could be involved include tool and die operation, woodworking and welding. Often manufacturers and other potential users job out such work or devote only a small staff to it, so a school project would have minimal effect on the current workforce.

For years, vocational education schools have operated programs in the construction trades that involve building a house or service building as a class project. This is a prime example of a program that could be adapted easily to include economic education. To ensure that students absorb economic lessons, as well as industrial ones, the program must allow students to maintain financial records and order supplies, combining these activities with coursework in economics. The practice helps prepare students for

careers as project-cost estimators, buyers, and other occupations that combine construction with economic understanding.

Similar programs could involve vocational education programs in auto and small-engine repair. Many schools already boast programs in which students repair cars and small appliances for members of the community. To infuse economic concepts into the curriculum, students should be required to work out the financial process of these transactions as well as the repair process. The program could be combined with a course in economic education.

Studies have shown that small and medium-sized firms show relatively high rates of growth. In part, that is because companies with fewer levels of accountability place a greater emphasis on employees who are strong decision-makers and have a working knowledge of economic systems and principles. Programs that combine economic education with hands-on vocational training prepare students to meet the needs of small and medium-sized employers.

Any field of vocational education can be connected to economic education through methods such as those discussed above. But none of them are designed to stand alone; they should be used as a unit to foster economic understanding most effectively.

**Roadblocks**

If incorporating economic education into vocational education were easy, every vocational school would have made progress toward implementing an economic education program. But there are difficulties in implementation. They include finding qualified teachers, making economic education interesting, coordinating efforts among all teachers involved in the program, deciding what to teach, obtaining additional funding for any necessary staff and materials, and winning community support.

The most serious problem is finding teachers qualified to teach economic education, especially in an academic or combined economic education program. According to one study, 54 percent of secondary school economic education teachers have taken a maximum of six semester or quarter hours of economic education in college and graduate school. More than half of all high-school economic education teachers have had fewer than three

courses in economic education. Yet they are expected to have economic knowledge sufficient to instruct high school students in economic education.[44]

In the short-term, there are no easy answers. Teaching does not offer enough in wages and benefits to lure economic education graduates into education. Often, students who receive a master's or other graduate degree in economic education can earn $50,000 or more in salary in private-sector jobs.

Requiring teachers to teach a subject in which they are not comfortable often means the subject will be taught directly out of the text. The result is predicatble. When a class is boring, students obtain little knowledge and understanding from the class.

The lack of a background in economic education is acute among vocational education teachers. Most do not have a background even in social studies, in which there is peripheral economic instruction. Since no emphasis ever has been placed on economic education in the vocational environment, economic issues have not been at the forefront of any vocational education courses or disciplines.

Remedial training of teachers, especially in vocational education, is one approach that must be considered, at least in the short term. Luckily, programs can be found to help train teachers in economic education instruction. Among these programs is one operated by the Joint Council on Economic Education (JCEE). The JCEE uses workshops and other programs to train educators (kindergarten through college) in basic economic concepts and operations.

The JCEE operates through a national board and state councils. The national center develops programs that the councils adapt to meet the educational needs of the states they serve. In Indiana, the Indiana Council for Economic Education is chaired by Professor Peter V. Harrington of Purdue University. Under the Indiana Council, there are 11 Centers of Economic Education located at most of the major universities in the state.

Another pressing need is for ways to make economic education interesting. One way is to connect economic principles, theories, and systems to the students' lives. This aspect should be easier in vocational education than in general or academic education, especially at the secondary school level. Concepts such as supply and demand, efficiency, productivity,

and labor markets can be directly linked to vocational education through projects, lectures, field trips and guest speakers.

Coordination between teachers and administrators involved in economic education is vital, especially if economic education is to be taught as a combined effort. Specific areas of coverage should be established, emphasizing that all teachers teach the same theories in the same way. Efforts should be made to ensure that students will not be confused by teachers who teach the same theory but emphasize different aspects or disagree on interpretation.

Deciding what to teach is difficult, no matter the subject, and economic education is no exception. First, any economic education program must be more than just consumer economics. The purpose of economic education is not to train students to balance a checkbook or maintain a household budget. It is to develop in students the ability to understand economic thought and apply it to their everyday lives. As Keynes said about economic education, "It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw correct conclusions."[45]

Second, the teacher, administrator or district must decide what to include in an economic education program. Should the program include a look at both macro- and micro-economics? Should only the free-enterprise system be taught, or should other systems such as communism, socialism, and feudalism be taught? What about issues such as the role of governments, tariffs and protectionism?

In deciding what to teach, it is vital to know the expertise of the teacher. If a teacher is unfamiliar with economic education or has had limited exposure to the field, asking the teacher to define terms such as lumpenproletariat, oligopoly, and the cyclical nature of free-enterprise economies is at minimum unfair. If teachers expected to teach economic education have little knowledge of the subject, they cannot be expected to teach all aspects of economic education, even after receiving training at workshops.

The students must also be considered. What is their background? Have they had any prior exposure to economic education? How can economic education best be linked to their specific course of study?

Two priorities in integrating economic education into vocational education should be instruction in micro-economics and the free-enterprise system. Micro-economic theories are more readily applicable to the lives of students. The link between micro-economics and vocational education is smoother than with macro-economics. This is not to say that macro-economics should not be taught. But given the limited amount of time available for economic education, an emphasis on micro-economics seems more likely to be immediately profitable for most vocational students.

The same can be said for emphasizing the free-enterprise system. The judgment is not whether the system is superior to communism or any other system. Instead, it is a matter of limited resources and time being put to the most beneficial use for the students. The students live and work in a free-enterprise system. Understanding the free-enterprise system thoroughly is of greater importance than a complete knowledge of communism.

Many issues, theories, and ideas must be covered to provide students with the information necessary to understand economic education. Buckles details the basic concepts of economic education and its categories in the following table.

## Basic Concepts of Economics[46]

**********

**Fundamental Economic Concepts**

Scarcity
Opportunity cost and trade-offs
Productivity
Economic systems
Economic institutions and incentives
Exchange, money and interdependence

**Microeconomic Concepts**

Markets and prices
Supply and demand
Competition and market structure
Income distribution
Market failures
The role of government

**Macroeconomic Concepts**

Gross national product
Aggregate supply
Aggregate demand
Unemployment
Inflation and deflation
Monetary policy
Fiscal policy

**International Economic Concepts**

Absolute and comparative advantage and barriers to trade
Exchange rates and the balance of payments
International aspects of growth and stability

**Measurement Concepts and Methods**

Tables
Charts and graphs
Ratios and percentages
Percentage changes
Index numbers
Real vs. nominal values
Averages and distributions around the average

**Broad Social Goals**

Economic freedom
Economic efficiency
Economic equity
Economic security
Full employment
Price stability
Economic growth

**********

When considering what to teach, personal prejudices should be removed from the decision as much as possible. A student can better appreciate the attractiveness, as well as the shortcomings of communism, if the student first understands what the communist theories of economics are.

In the final analysis, what should be taught is not a simple question. A large number of variables including students, teachers, school budgets, specific vocational programs, school goals, business and community goals and demands, and business and community availability are some of the issues that must be considered in deciding what to teach in economic education.

Getting additional funding to hire additional staff, acquiring teaching materials, or paying for teacher training are always difficult tasks. In attempting to find additional funding by the traditional methods (i.e., asking school boards), all sources of community support should be tapped. Also, there are state and national organizations that encourage and support economic education. An appendix following this monograph lists potential sources of materials, training, and support that may be able to help with potential funding problems for economic education.

The economic education effort can profit greatly from the involvement of business and community leaders. In seeking their support, emphasize the shrinking labor force and increasing competition that they face. Show them that by helping students, they are fashioning better decision-makers, better citizens, and better workers. Be creative. Try to think of ways that all parties can benefit.

## Conclusions

In a perfect educational world, economic education would begin when students start school. Unfortunately, too often students receive very little or no economic education at all. Economic education is more than just memorizing terms and theories. It is the development of a thought process. An economically literate person is one with strong analytical skills, because economic education is a discipline that developes these skills and abilities.

The economic method of problem solving develops and reinforces analytical thought. The method has five parts:

1. Define the problem.

2. Specify the policy options or possible decisions.

3. State the criteria or goals the alternatives should meet.

4. Analyze the consequences of each of the policy options or decisions, using the relevant economic concepts, and evaluate each of the options according to each goal.

5. Decide which alternative is best in light of the evaluations and the relative importance of the different goals.[47]

Employers' needs have changed. No longer are they looking for assembly-line appendages who do one job for 30 years without asking a question or making a suggestion. Employers today are looking for problem solvers, people who can accurately access a problem and develop the most effective solution.

As a result, vocational education at all levels must adapt to meet the needs of the present and the future. Students cannot simply be trained to do one job; they must be educated so they can understand, analyze and adapt to changes in their lives and careers. The graduates of a vocational education program today must be able to change careers if needed, meet technological changes in their field, and resolve any negative situation that arises on the job.

To meet the new demands, vocational administrators and teachers must build better partnerships with community businesses to better understand the needs of business and to facilitate more effective training programs. Partnerships can lead to additional resources for vocational schools.

In its state plan, the Indiana Commission on Vocational and Technical Education provides a comprehensive discussion of what qualifies as vocational education. It is:

* Any vocational, agricultural, occupational, manpower, employment, or technical training or retraining that:

    1. Enhances an individual's career potential and further education.

    2. Is accessible to individuals who desire to explore and learn for economic and personal growth leading to employment opportunities.

* An integral part of the total curriculum and consists of systematic, organized services, activities and programs for education and training that prepare students with technical, employability and life skills.

* Systematic, organized programs in such fields as agriculture, business occupations, home occupations, health occupations, marketing and distribution occupations, technical and emerging occupations, modern industrial occupations or for additional preparation for a career in such fields, and in other occupations, requiring less than a baccalaureate or advanced degree.

* An emphasis on leadership development, practical hands-on experience or application, entrepreneurship, as well as attitudes, self-concepts, knowledge and skills relative to jobs and job tasks.

    1. Designed to prepare students for advanced training and education.

    2. Designed to enhance and complement basic academic skills that help achieve total preparation of the student.

* Instruction that is designed upon completion to prepare individuals for employment in a specific occupation or cluster of closely related occupations

in an occupational field, and which is especially and particularly suited to the needs of those engaged in or preparing to engage in such occupation or further education.

* Instruction that may include classroom instruction; related field and laboratory work; programs providing occupational work experiences, including cooperative education; related instructional aspects of apprenticeship programs; remedial programs; and activities of vocational student organizations.[48]

According to the state plan, training or retraining should help with career potential and further education. Including economic education helps with both, by helping the student understand:

The economic significance of career and education decisions.

Pathways to career advancement through understanding labor markets and occupational projections.

The importance of increased employability skills to career enhancement.

Virtually all the components of the commission's definition of vocational education -- especially those that relate to employability, job, and life skills -- can be enhanced with economic education. Economic education in vocational education complements academic and vocational skills, acting as a catalyst to help students apply both skill branches to their everyday lives.

Further, vocational education must meet the needs of students and the employers that hire the graduates of the vocational schools. The best way to meet the needs of both is to prepare the student to make the most rapid and successful transition into the working world as possible. To do so, the student must have the specific skills to do the job, as well as the general skills needed to evaluate and compensate for any irregularities that occur on the job.

By the year 2000, up to 21 million workers will need to be trained and another 30 million workers currently employed will need to be retrained.[49] Students must

be able to meet the changes brought about by technological advances and be able to adapt, according to former Education Secretary Bell. Specifically, Bell states:

> How do you meet the challenges, catch the trends, catch the innuendos and subtleties? The answer is that you have to be bright, you have to be adaptive, you need to be creative. You need to be a "quick study" -- a learner. All of that demands a different citizen -- able to read and weigh alternatives, and use information in an information society in a way that is different.[50]

Vocational education systems, whether at the pre-secondary, secondary or post-secondary level, must be willing to adapt their curricula to meet the demands of students, employers and society. The way to do that is not through single-skill vocational programs but through a program that emphasizes wholeness, the interworking of all vocational and academic skills to help a student grow into a productive worker and citizen.

A tire dealer in North Carolina states:

> It disturbs me that we are bringing up a generation of illiterates when it comes to economics. I see it in my business, and other businessmen do, too. That's what frightens me. When we hire someone in our business, we look for someone who can read and write. We take them today in the full knowledge that we are going to have to teach them what business is all about. They just don't have any knowledge of business when they come to us.[51]

A further emphasis on the need for complete workers comes from the book The Neglected Majority. The author states:

> Broad technology, and not high technology, will characterize the main influence on the development of our nation's work force in the future.... Technicians, that is broad-technology technicians, will act as the force that holds together the thousands of potentially isolated elements in our work world. They will be the individuals who not only understand underlying principals

> but also have the ability to apply what they have learned.... The development of this kind of worker will require some new programs and approaches to education.[52]

Clearly, the emphasis of vocational education must shift away from the single-skill training of years past. The broad-based program, with an emphasis on wholeness, is clearly needed in vocational education. New programs and approaches are needed to meet the needs of the present as well as the future.

In the final analysis, employers want workers who can master new skills quickly, adapt, communicate effectively, and make good decisions. Teaching a specific skill or occupation, without any other skills, does not meet the needs of employers. To meet the demands of today's workplace, vocational education must add additional subjects to their curricula, and economic education is one of the most important.

Better prepared vocational education students make more efficient, effective, and competitive workers. Better workers make more efficient, effective, and competitive companies. With a modern, flexible labor force and efficient, effective, and competitive manufacturing and service sectors, Indiana will remain a major player in the national and world economy for decades to come.

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## APPENDIX A
## ADDITIONAL SOURCES

### Organizations

The following organizations offer resources that can be acquired. Some items are free. Some of the organizations offer teacher workshops and training in economic instruction.

Agency for Instructional Technology
Box A
Bloomington, IN 47402
(812) 339-2203 or (800) 457-4509

America Enterprise Institute
1150 17th Street N.W.
Washington, D.C. 20036
(202) 862-5800

Center for Education and Research in Free Enterprise
Texas A & M University
College Station, TX 77843
(409) 845-7722

Center for the Study of American Business
Washington University
St. Louis, MO 63130
(314) 889-5630

Foundation for Research in Economics and Education
1100 Glendon Avenue, Suite 1625
Los Angeles, CA 90024
(213) 208-7735

Foundation for Teaching Economics
555 California Street, Suite 4600
San Francisco, CA 94104
(415) 981-5671

Invest-in-America National Council
2400 Chestnut Street, Suite 3308
Philadelphia, PA 19103
(215) 568-7311

**APPENDIX A** (cont.)

Joint Council of Economic Education
432 Park Avenue South
3rd Floor
New York, NY 10016
(212) 685-5499

Junior Achievement of Central Indiana, Inc.
1317 North Pennsylvania Street
Indianapolis, IN 46202
(317) 634-3519

National Federation of Independent Business
Capitol Gallery East, Suite 700
600 Maryland Avenue, SW
Washington, D.C. 20024
(202) 554-9000

World Research, Inc.
11722 Serrento Valley Road
San Diego, CA 92121
(619) 456-5278

Also, see Economic Education for Citizenship, by Stephen L. Miller, published in 1988 by the Foundation for Teaching Economics, and distributed by the ERIC Clearinghouse for Social Studies/Social Science Education. It offers a detailed list of available sources, including teachers' guides, student materials, videos and films, textbooks (by grade level), software and simulations, and bibliographies. This book can be purchased by contacting:

ERIC Clearinghouse for Social Studies/Social Science Education
Publications Manager
Indiana University
2805 E. 10th Street, Suite 120
Bloomington, IN 47408
(812) 855-3838